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FORE & AFT SEAMANSHIP
FOR
YACHTSMEN.

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FORE & AFT SEAMANSHIP

FOR YACHTSMEN;

WITH NAMES OF

ROPES, SAILS, AND SPARS

IN A

CUTTER, YAWL, OR SCHOONER.

REVISED BY A PRACTICAL YACHTSMAN.

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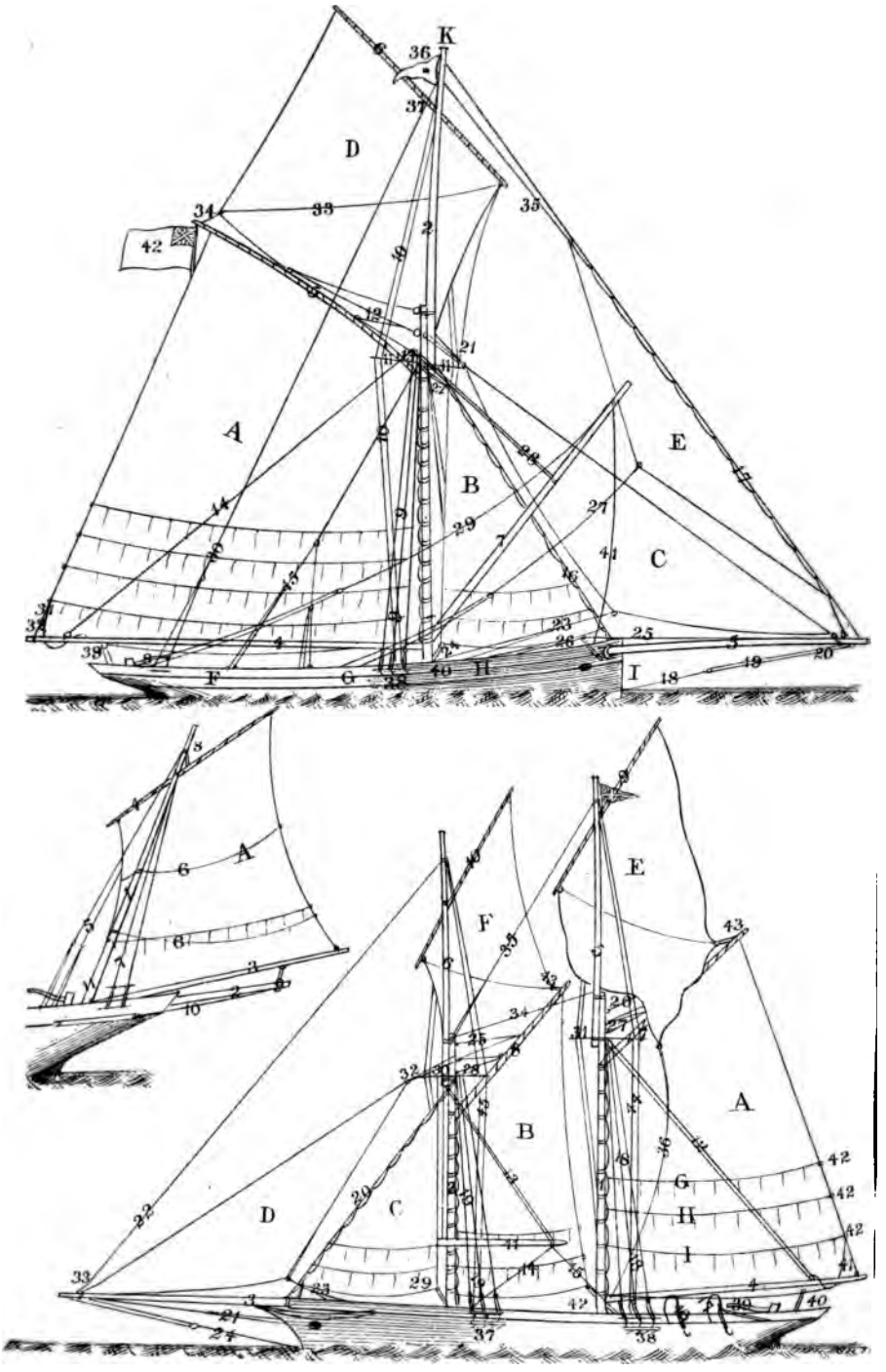
K
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I

Ropes, Spars, and Sails of a Cutter, Yawl and Schooner.

CUTTER'S SPARS AND ROPES.

1. Lower mast and hoops.
2. Topmast.
3. Bowsprit.
4. Main boom.
5. Gaff.
6. Topsail yard.
7. Spinnaker boom.
8. Tiller.
9. Shrouds.
10. Topmast shrouds.
11. Crosstrees.
12. Peak halliards.
13. Throat or Main halliards.
14. Boom Topping lift.
15. Runners and tackles.
16. Forestay.
17. Topmast stay.
18. Bobstay.
19. Bobstay fall.
20. Jib traveller.
21. Jib halliards.
22. Fore halliards.
23. Jib sheets.
24. Fore sheet.
25. Bowsprit shrouds.
26. Whiskers.
27. Jib topsail sheet.
28. Spinnaker boom topping lift.
29. Spinnaker boom brace.
30. Maintopmast backstay.
31. Reef Pennant.
32. Main outhaul.
33. Gaff topsail clew line.
34. Gaff topsail sheet.
35. Jib topsail halliards.
36. Burgee
37. Gaff topsail halliards.
38. Channels.
39. Main sheet.
40. Fore sheet.
41. Spinnaker boom guy.
42. Ensign.

CUTTER'S SAILS, &c.

A. Mainsail.
B. Foresail. C. Jib.
D. Gaff topsail.
E. Jib topsail.
F. The quarter.
G. Midships.
H. Forecastle.
I. Stem, Cutwater.
K. Truck.

YAWL'S MIZEN.

A. The sail, or mizen.
1. Mast.
2. Bumpkin.
3. Mizen boom.
4. Main yard.
5. Stays.
6. Brails.
7. Shrouds.
8. Mizen halliards.
9. Mizen sheet.
10. Bumpkin shrouds.
11. Mizen tack.

SCHOONER'S SPARS AND ROPES.

1. Mainmast.
2. Foremast.
3. Bowsprit.
4. Main boom.
5. Maintopmast.
6. Foretopmast.
7. Main Gaff.
8. Fore Gaff.
9. Maintopsail yard.
10. Foretopsail yard.
11. Squaresail boom.
12. Main toppinglifts.
13. Squaresail yard lifts.
14. Squaresail yard guys.
15. Squaresail yard brace.
16. Davit falls.
17. Davits.
18. Main shrouds.
19. Fore shrouds.
20. Forestay.
21. Bowsprit shrouds.
22. Foretopmast stay.
23. Jib sheet.
24. Bobstay.
25. Fore peak halliards.
26. Main peak halliards.
27. Main throat halliards.
28. Fore throat halliards.
29. Forestaysail sheet.
30. Fore crosstrees.
31. Main crosstrees.
32. Jib halliards.
33. Jib traveller.
34. Triatic stay.
35. Maintopmast stay.
36. Main Gaff topsail tack.
37. Fore channels.
38. Main channels.
39. Tiller.
40. Main Sheet.
41. Reef pennant.
42. Reef cringles.
43. Maintopsail sheet.

SCHOONER'S SAILS, &c.

A. Mainsail.
B. Foresail.
C. Fore staysail.
D. Jib.
E. Maintopsail.
F. Foretopsail.
G. H. I. Reef points.

NOTE.—*In Sails, the lower fore corners are called the tacks, and the after corners the clews; of the sides, the upper part is the head; the lower, the foot; the fore part, the luff; the after part, the leach.*

SIGNAL STATIONS & SEMAPHORES.

Signal Stations have been established at many conspicuous places along the coasts of Great Britain and Ireland, and similar stations, as well as Semaphores, have been erected on the coasts of many of the maritime nations of Europe; these stations have wherever practicable, means of inter-communication by telegraph wires with each other, and with the chief Telegraphic Stations of the Continent and Great Britain. *No other Signals than those of the International Code are recognised.*

The Colonies and India also use the International Code to the exclusion of all others.

A *homeward bound* ship passing another ship should hoist B P W, "do you wish to be reported"; and report the Distinguishing Signals given in reply.

SIGNALS OF DISTRESS.

In the day-time, whether used or displayed together or separately.

1. A gun fired at intervals of about a minute.
2. The International Code signal of distress indicated by N C
3. The distance signal, consisting of a square flag, having either above or below it a ball, or anything resembling a ball.

At night, whether used or displayed together or separately.

1. A gun fired at intervals of about a minute.
2. Flames on the ship, (as from a burning tar-barrel, oil-barrel, &c.)
3. Rockets or shells, of any colour or description, fired one at a time at short intervals.

"Any Master of a vessel who uses or displays, or causes or permits any person under his authority to use or display any of the said signals, except in the case of a vessel being in distress, shall be liable to pay compensation for any labour undertaken, risk incurred, or loss sustained in consequence of such signal having been supposed to be a signal of distress, and such compensation may, without prejudice to any other remedy, be recovered in the same manner in which salvage is recoverable."—(*Merchant Shipping Act*, 1873.)

SIGNALS FOR PILOT.

In the day-time, whether used or displayed together or separately.

1. The Jack or other national flag usually worn by merchant ships, having round it a white border one-fifth of the breadth of the flag, to be hoisted at the fore: or
2. The International Code pilotage signal indicated by P T

At night, whether used or displayed together or separately.

1. The Pyrotechnic light, commonly known as a blue light, every fifteen minutes; or
2. A bright *white* light flashed or shown at short or frequent intervals just above the bulwarks, for about a minute at a time.

"Any Master of a vessel who uses or displays, or causes or permits any person under his authority to use or display, any of the said signals for any other purpose than that of summoning a pilot, or uses or causes or permits any person under his *authority to* use any other signal for a pilot, shall incur a penalty not exceeding *twenty pounds.*"—(*Merchant Shipping Act*, 1873.)

QUESTIONS AND ANSWERS

IN

FORE AND AFT SEAMANSHIP.

CUTTER OR YAWL RIG.

Q. What is a Cutter Rig?

A. One mast, bowsprit fitted to run out and in, and jib set flying; the chief sails are fore-and-aft mainsail, gaff-topsail, foresail, and jib.

Q. What is a Sloop Rig?

A. One mast and fore-and-aft sails like a cutter, but a standing bowsprit; the foresail is set on a stay leading to the bowsprit, she sometimes sets a flying jib on a small jibboom.

Q. What is a Yawl or Dandy Rig?

A. A fore-and-aft mainsail, gaff topsail, foresail, and jib, are carried as in a Cutter; in addition there is a small mizenmast stepped in the stern, upon which is set either a lug or spritsail called the mizen, the sheet of which is led to the end of a horizontal spar projecting over the stern; the foot of the mainsail is shorter to allow the boom to traverse clear of the mizenmast. The Dandy is a similar rig, but should strictly have a jib-headed mizen and no boom to the mainsail, that it may be easily brailed up by a rope passing round it.

Q. How many shrouds on a side are usually fitted in these Rigs?

A. Three or four in large craft, two in small vessels.

Q. Any other gear?

A. Yes, a runner and tackle with pennant on each side abaft the rigging.

Q. What are they used for?

A. They act as backstays for the lower mast, and are also used for hoisting a boat or other heavy weight out or in.

Q. To what portion of the hull is the fore stay secured?

A. To the stemhead in a Cutter. In a sloop the forestay generally leads to the end of the bowsprit.

Q. Do fore and aft vessels often house and send up their topmasts?

A. Yes; and for this purpose a mast or heel rope is kept rove in readiness.

Q. What precautions are generally taken to prevent the mast from falling when housed, in addition to keeping the mast-rope rove?

A. The bight of a rope (about two or three fathoms long, with an eye spliced in each end) is seized on to an eye bolt, on the heel of the topmast; the ends of the rope are seized on to the foremast shroud of the rigging, one on each side, so that when the mast is housed, the legs form an angle of about 45° with the heel of the topmast. This is generally a fixture, sufficient drift being allowed for the mast to be housed or sent aloft, without taking the seizings off, a lashing round the heel of topmast and lower mast does just as well.

Q. How is a Cutter's topmast rigging fitted?

A. It is cut short so that it can be set up when the topmast is lowered without putting a sheepshank in it.

Q. Describe it.

A. It is led from the topmast head through a score in the outer arm of the cross trees, below which, and in the end, a thimble is spliced. From this to the channels of the rigging it is set up with a tackle. Short lengths, called legs, fitted with clip-hooks, or shackles are used to give the required length when the topmast is sent aloft.

Q. How is the bowsprit supported?

A. By means of a bobstay and shrouds.

Q. How are they fitted?

A. With two single blocks, or a runner and tackle (the latter in a large vessel). Shrouds have the tackle on the inner end; bobstay, the tackle on the outer end, with a line on the bight to trice it up with when required. The standing part of a bobstay is generally chain, that of the shrouds wire rope.

Q. How would you reef a Cutter's bowsprit?

A. Slack up all the gear. Reeve a heel rope and heave taut upon it, and take out the fid. Slack the bowsprit in to the second or third fid hole, as required, ship the fid, and then set up the gear. Some vessels are fitted with a rack and pinion wheel, with a handle similar to that of a winch for reefing the bowsprit.

Q. What are whiskers?

A. Two iron rods placed on each side of the stem to extend the spread of the bowsprit shrouds in sharp bowed vessels.

Q. How are the topping lifts fitted?

A. Single or double from the masthead to the boom end (in small vessels).

Q. Describe them.

A. The standing part is hooked on to the boom and led through a block on the cap at the masthead, from thence on deck, and there set up with a runner and tackle. Double ones are fitted with the standing part on the cap, and led thence through a single block at the boom end and back to a block at the cap, thence to the deck. In large Cutters a single one is fitted on each side of the boom, and rove through a block under the eyes of the rigging. The lee one is overhauled slack, or unhooked, to keep the chafe off the sail when set.

Q. How are the peak halliards rove?

A. Through two blocks on the gaff, and three at the masthead. The standing part has a tackle on it with about 3 to 4 fathoms drift between the blocks when overhauled, which tackle is hooked on to an eye bolt abaft the rigging and called the peak purchase. The hauling part is led from the lower block at the masthead to the deck.

Q. How is the peak line rove, and what is it used for?

A. As a single whip through a small block at the gaff end. Used for hoisting the ensign or signals, and for hauling the gaff down.

Q. How is the luff of the mainsail bent?

A. Bent on to hoops round the mast, or with hanks from the throat down to the third reef, from thence there is sometimes a lacing.

Q. Why?

A. To trice the tack up, or take the reefs in with greater facility, by slacking up the lacing or unreeving it.

Q. How is the tack tricing line fitted?

A. A single block on the tack of the sail, a single block and the standing part under the jaws of the gaff; from thence it leads on deck.

Q. How are the reef pennants of the mainsail fitted?

A. With a wall knot or Matthew Walker on one end.

Q. How are they rove?

A. From down up, through the cleat on one side of the boom, through the corresponding reef cringle on the after part of the sail, and down through the sheave on the other side of the boom.

Q. How is the foresail fitted?

A. With hanks on (or by a lacing to) the fore stay. The halliards have two single blocks with clip hooks for hooking into the thimble in the head of the sail. The sheet sometimes travels on an iron rod or horse across the deck. A bowline bridle on the after leach or leech, with a line to the foremost shroud is used to keep the sail to windward when necessary.

Q. How are the jib halliards or halyards rove?

A. Through two single blocks with a purchase on the standing part same as the peak halliards.

Q. How would you set a jib?

A. Hook on the halliards to the head of the sail, the tack to the traveller, shackle on and belay the sheets slack, then haul the tack chock out, hoist away on the halliards, and haul aft the sheet. (Set on the lee side of the foresail.)

Q. How is the gaff topsail sheet rove?

A. From the deck through a block under the jaws of the gaff, from thence through a sheave or a block at the gaff end.

Q. How would you take a gaff topsail in?

A. Lower the halliards, and haul on the downhaul, until the head of the sail is down to the cap of the masthead, hold on the halliards, let go the sheet, and trip up. When the sail is clewed up, let go the halliards, and haul it down by the tack and downhaul. Always take it in to leeward of the mainsail if possible because there is less chance of its jambing.

Q. How is the gaff topsail downhaul fitted?

A. The standing part on the clew of the sail, and through a single block on the head of the sail (if it is jib headed); if set with a yard on the head, the block is on the inner yardarm.

Q. How is the square sail yard fitted in a Cutter or Sloop?

A. In modern vessels, see next question. The old fashioned way was with a strop and thimble on the midship part of the yard, this travelled on a wire rope jumper, set up from the masthead, to the deck, at the fore side of the mast. The yard was usually carried up and down the mast when not in use. When in use, it is squared by lifts from the lower masthead, and by braces leading aft.

Q. How would you set a squaresail?

A. Lower the foresail down, hoist up and square the yard, bend on the yardarm whips to the earings, and the foresail halliards to the middle of the

head of the sail, hitch the lizard on the jumper to the midship halliards, hoist up and trim. A downhaul is bent on to each halliard. In modern yachts the sail is sometimes bent to the yard which is hoisted by the fore halliard, lifts being dispensed with.

Q. How would you take it in?

A. Keep the tack and sheet fast. Slack off and haul down outer halliards as low as possible. Then let go midship halliards, haul on the downhauls, and gather in the sail. In the case of a flying squaresail, as it is called, simply lower the yard down and gather in the sail to leeward of the mainsail.

Q. How would you reef a mainsail?

A. Lower throat and peak halliards sufficiently to take in the reef required, hook on reef tackle to reef pennant, and bowse the reef cringle down on to the boom, pass the tack earing, tie the reef points, and reset the sail, hoisting throat taut up before the peak.

Q. How would you take in the balance reef, the third and fourth reef being in?

A. Ease the peak sufficiently to allow the jaws of the gaff to come close down; when down pass throat earing, and hook on tack tackle, reeve the points, tie them, and set up the peak halliards.

Q. Suppose your mainsail has no balance reef?

A. Then lower the jaws of the gaff as aforesaid and lash the leach of the sail round the boom.

Q. What is scandalizing the mainsail?

A. Tricing the tack up, and lowering or dropping the peak.

Q. Where does the boom guy lead to when running before the wind?

A. Outside the rigging, and in board, to the fore part of the bowsprit bitts.

Q. What is a jib topsail, and how is it set?

A. A light sail set from the bowsprit end to the topmast head. Sometimes it is bent on hanks to the topmast stay.

Q. What is a balloon jib?

A. A large jib of light make, used only in light winds for going free; it extends from the bowsprit end to the main rigging.

Q. What is a spitfire jib?

A. A very small jib, of No. 1 canvas, for stormy weather.

Q. How would you shift jibs in a gale of wind?

A. Get the sail up from below, lay it along the weather side of the foredeck with the head aft. Then haul the foresheet to windward, round in on the mainsheet, trice up the tack and becket the helm. Let go the jib outhaul, sing out to stand by! and the sail will fly in along the bowsprit, muzzle it, let go the halliards, and haul down. Bend on the sheets to the spitfire jib, hook the tack on the traveller, and the halliards to the head, pass a couple of rope yarns round the head of the sail. Haul out the traveller to its proper place; belay the outhaul, make fast both sheets slack, hoist up, let draw foresheet and trim aft your jib sheet.

Q. What are the rope yarns round the head of the sail for?

A. In order that the sail may be snug while being roused out on the bowsprit. Directly the sail is hoisted the rope yarns part.

Q. What canvas would you reach under, in a gale, with heavy sea?

A. Trysail, double reefed foresail, and storm jib.

Q. What canvas would you heave to with, heavy gale and sea?

A. Trysail and storm jib, topmast on deck,

Q. How would you get under weigh?

A. Heave short, loose sails, hoist the mainsail, trice the tack up, and overhaul the main sheet. Heave the anchor up, when off the ground run the foresail up, with sheet to windward, helm down, boom well in; as soon as the anchor was up, let draw fore sheet, shift the helm, haul in the main sheet, set the jib, and down tack of the mainsail.

Q. How would you tack?

A. Ease down helm; as soon as she comes head to wind slack off jib sheet. As soon as the jib fills on the other tack, let draw the fore sheet and haul aft jib sheet, and trim sail.

Q. How would you wear round?

A. Up with the helm, trice up the tack and ease down the peak and throat. When before the wind, shift over the mainboom, get the head sheets over, and as she rounds to, down tack of mainsail.

Q. You are running before the wind, and wish to gybe, what precautions should you take?

A. Gybing in a fore and aft vessel requires great care, otherwise it is dangerous, (the manœuvre is the same in both classes of vessels) the chances are that the main boom may be sprung, or the sail split, when the boom is brought up with a jerk, after going over. In a light breeze and smooth water it may be done with a whole mainsail set, but in a strong breeze in a sea-way it requires preparation and care. The first thing is to reduce the power of the mainsail; this is readily done by tricing up the tack of the mainsail, first topping the boom well up, and easing down the peak and throat; quarter the wind (if running with it aft) and haul in the main sheet, unhook the guy before putting the helm up, and gather in quickly as much of the sheet as possible, while the vessel is paying off and the boom is going over. When you have brought the wind on the other quarter, hook on your guy, slack off the main sheet, trim and make sail.

Q. Suppose your masthead broke off just above the eyes of the rigging, and carried away your peak halliards and its blocks, how would you set your mainsail?

A. With three reefs, and hoist the peak of the gaff with the lee boom topping lift or unbend the sail from the gaff, take an Irishman's reef in (that is, tie up) head of the sail, and hoist up with the throat halliards.

Q. Your lee boom topping lift is broken, or carried away?

A. I would rig a span from the jaws to the end of the gaff, hook the throat halliards on to the middle of the span, and hoist the gaff with it.

Q. Your bowsprit is carried away near the gammon iron?

A. Luff-up and heave-to by putting down the helm, and haul fore-sheet to windward. Trice up the tack of the mainsail, top the boom well up, and haul in the main sheet; parbuckle bowsprit alongside to leeward, that is, get a rope round each end of the broken spar, with one part made fast in board, and hauling on them roll the spar in board; secure the jib and gear, take the shroud iron off the end, unreeve the inner stump of the bowsprit from the bitts. Reeve the long

or outer end of the bowsprit through the bitts and gammon iron, put on the traveller and shroud-iron, sheepshank shrouds and bobstay, run out the bowsprit, lash the heel to the bitts, keeping the sheave in the outer end fair up and down. Set up shrouds, bobstay and topmast stay. Set a small jib, put the helm up, trim and make sail.

Q. Fore stay is carried away. What would you do?

A. Put the helm down. Trice up the tack and ease down throat and peak halliards; down foresail, hook the halliards on to the stem head, haul them taut; send a hand aloft to place a strop round the masthead just over the collar of the forestay, hook on a good double block, and reeve a luff tackle of sufficient length to reach to the stemhead, hook on; sway away until the strain is taken off the fore halliards, belay securely and jog on to the nearest port.

Q. Your bowsprit shroud is carried away. What would you do?

A. In a strong breeze put the helm down and keep her easy to the wind. Ease in the jib halfway, hoist it well up, and trim the sheet (or bend a smaller jib) after securing the shroud with a shroud knot if it was rope,—if it was chain, and no shackle at hand, reef knot it,—stop the ends, set up the gear, trim and make sail.

Q. How would you anchor on a wind?

A. Trice up the tack of the mainsail, take in the jib, slack and trice up the bobstay, put the helm down, when she comes up head to wind, meet her with the helm, let the foresail run down, keep her head to wind until she loses headway, then let go the anchor, and pay out chain. When she is brought up, lower the mainsail, and furl sail.

Q. How would you anchor when running?

A. Haul the head sails down, slack and trice up bobstay, trice up the tack of the mainsail and drop throat and peak, put the helm down, haul in the main sheet amidships; when she comes head to wind, keep her so with the helm, until she loses headway. Let go the anchor, pay out chain, lower the mainsail, and furl sails.

Q. You are on a wind; heave to so as to allow a boat to come up alongside; smooth water, light wind?

A. Trice tack of mainsail up, haul in mainsheet, and lay both and jib fore sheets a-weather.

Q. Suppose you were in a strong breeze?

A. Ease off jib sheet, haul foresheet a-weather, and stand by with a line for the boat.

Q. You are close hauled on port tack, and a man falls overboard, what do you do?

A. Throw the yacht in the wind, throw overboard a life-buoy, grating, oars, or anything that is at hand. By this time the yacht will be on the other tack, and standing towards the man.

Q. You are running in a strong breeze, when a man falls overboard?

A. Haul in mainsheet, up main tack, round to and get the boat in the water.

Q. You spoke just now of a shroud knot. How is it made?

A. It is generally used to repair a broken or stranded shroud, and is made by taking the two severed ends, unlaying them the same as for a short splice. Place them together closely, take the outside strand of the lower part, and pass it round the upper part in a loop; take the next

lower strand, pass it under and up through the bight of the first-named strand, then take the end of the next lower strand, pass it round the end of the first strand, outside of the second strand, and up through the bight of the first strand, draw hand taut, and do the same with the other part. Draw the strands taut as possible, marl and serve the end of the strands on each side, and set up your shroud again.

Q. Do the above manœuvres apply to a yawl as well as a cutter?

A. Yes, with two or three exceptions. For instance, in a yawl, when gybing or going about, the mizen stays (when carried) have to be attended to. Lee one slacked off and weather one hauled taut whilst in stays. The mizen sheet works itself, except when requiring to be eased off or hauled in. In a yawl the mizen will be found of great service in keeping the vessel's head to the sea whilst getting the storm trysail on her, also a yawl can be got under weigh with her mizen and jib alone. This rig is very useful for cruising and fishing, as it does away with the necessity of carrying a heavy main boom, but it will never supersede the cutter rig, which is the more elegant of the two, and the cutter will always be the smarter vessel.

SCHOONER RIG.

Q. What is a Fore-and-Aft Schooner Rig?

A. That of a Schooner without a square topsail, in place of which she sets a fore gaff-topsail. Small ones, and most racing craft, have a Cutter's bowsprit, to run out or in.

Q. What is a Topsail Schooner Rig?

A. A fore-and-aft mainsail and gaff-topsail upon the mainmast; gaff foresail, and staysail set on the fore stay and one or two jibs, square topsail and top gallant sail on the foremast, and with a standing bowsprit.

Q. Where is the fore stay usually set up?

A. Generally to a bull's-eye in an iron band on the bowsprit, just inside or outside the stem, unless the vessel has a running bowsprit, when it is fitted to the stemhead.

Q. How is the mainmast stayed?

A. With a triatic stay. That is a stout stay from one lower masthead to the other.

Q. Are any other stays used for this mast?

A. Yes, in large Schooners, a double stay, set up with a runner and tackle, to eye-bolts near the waterways, one on each side, about the after part of the fore rigging. In harbour, both are set up. When under weigh, the lee one is let go, to be clear of the foresail.

Q. How are the peak halliards of the mainsail rove?

A. Through three single blocks on the masthead, and two on the gaff. The hauling part on one side on deck, and the standing part on the other, the latter being fitted with a gun-tackle purchase.

Q. How are they used when setting the mainsail?

A. Hoisted taut with the hauling, and then set up with the standing part.

Q. How is the outer end, or clew of mainsail secured?

A. Generally shackled on to a traveller, with about three feet drift, to slack up, when the sail shrinks with wet.

Q. How are the tack tricing lines fitted?

A. With a gun-tackle purchase; a single block on the tack of the sail, and one underneath the jaws of the gaff; from this the hauling part leads on deck.

Q. How are vangs fitted?

A. With pennants or blocks on the gaff. With the first, a gun tackle purchase; with the second, single whips. Vangs are now seldom used in yachts.

Q. How are boom topping lifts usually fitted?

A. In small vessels from the boom end to the mainmast head leading on deck. Single block on boom end, the standing part and single block at mast-head. In large vessels they are fitted one on each side; they are hooked on to the main boom, half way between the sheet block and the reef chocks. They then lead through blocks on the cheek of the mast (under the eyes of the rigging) on to the deck, where they are set up with a runner and tackle.

Q. Where is the reef tackle of the mainsail usually kept?

A. It is hooked on to eye-bolts under the mainboom.

Q. How are the reef pennants fitted?

A. One end is a Matthew Walker, or double wall knot, and it is then rove through an eye-bolt or bee block, on one side of the boom, then through the cringle on the after leech of the sail, and down through a chock or bee block (which has a sheave in it) on the other side of the boom. This end is made fast to the tackle when reefing.

Q. What is generally used for reef pennants?

A. Manilla rope.

Q. Where is the storm trysail gaff usually carried?

A. On the top of the mainboom, in chocks or beds, in large vessels.

Q. Proceed to get under weigh, and cast to starboard.

A. Heave short. Set foresail and mainsail, taking care to lead the gaff between the topping lifts. Trice the tacks up. Loose the head sails, and then heave up the anchor. When the anchor is off the ground, run the jib up. (Starboard the helm.) When the anchor is up, cast loose your square topsail, if you have one, down tacks and make sail; shifting the helm as soon as the topsail is filled.

Q. How would you put the vessel about, or tack?

A. See the ropes clear fore and aft. Mainstays (when fitted) clear, the lee one ready for setting up, when she comes head to wind, and the other for letting go. Put the helm down, haul in the main sheet, ease off jib sheets. When head to wind, haul over head sheets, keeping the fore-staysail to windward, to help to box off. As soon as she is sufficiently off fill the square topsail, let draw the fore-staysail, and trim sails. Shift gaff topsail tack and main tack tackle over to windward.

Q. How would you wear the vessel round?

A. Trip up, or haul down the gaff topsail, haul up the tack of the mainsail. Ease up the peak, and throat halliards if needful, ease off the main sheet, and put the helm up. As she pays off, round in the weather braces, and haul in the slack of main sheet. As she comes round, shift the main boom over, brace up the yards, hoist the peak of mainsail, down main tack, trim sails and set gaff topsail.

Q. Suppose your weather boom topping lift broke while you were close hauled, what would you do?

A. Haul taut the lee one until the other was spliced.

Q. The lee one was unhooked to prevent chafe?

A. In that case I would ease off the gaff topsail sheet, also the throat and peak halliards, to lower the boom on to the rail, secure it there till the lee one was shifted over to windward. Hook it on, and trim mainsail. Splice the broken one, and send it aloft for a lee one.

Q. Being on a wind, proceed to trim sail so as to keep the wind nearly dead aft, say about a point on the quarter.

A. Hook on the guy pennant to the main boom, and pass it outside of the lee main rigging, bring the end inboard to the lee waist, hook on the guy tackle from the windlass bitts; trice up the tack of the mainsail; put the helm up, check the yards, ease off main sheet, and take in the slack of boom guy tackle; haul flying jib down, and ease away foresail and fore-staysail sheets.

Q. How would you set the square sail?

A. Haul down the fore-staysail.

Q. Why?

A. Because the sail would not draw, and the halliards are wanted for the midship halliards of the square sail.

Q. Proceed.

A. Hook on the yard whips to the head cringles, and the fore-staysail halliards to the middle of the head, hoist up and trim, having a downhaul to each halliard.

Q. Describe how yard arm whips are fitted.

A. The standing part of whip and a single block on the yard arm, a hook block on the sail. The whip leads from the yard arm to a block on the yard truss, or to the lower masthead. From thence on deck.

Q. How would you take in the squaresail, supposing it was blowing a strong and increasing breeze?

A. Slack away the yard arm whips, hauling in on the downhauls, when they are down as low as possible, slack away the midship halliards, and gather in the sail. (Tack and sheet to be kept fast till the sail is down.)

Q. What is to prevent the head of the sail blowing away from you when you let go the midship halliards?

A. The lizard, which is bent on to the middle of the head of sail, before hoisting it up.

Q. Describe this.

A. A thimble with a rope tail; this travels on the topsail sheet in light winds, or on a wire rope jumper, from the masthead to the deck. A downhaul is usually bent on to it.

Q. How would you reef the square topsail?

A. Lower the yard down. Trim with the braces to keep the sail on the lift. Haul out reef tackles, haul taut buntlines and clewlines. Send men aloft to reef.

Q. With a reef in, and the sail set, how would you shake it out?

A. Lower the yard down, haul the braces taut, haul out the reef tackles, let go the reef points, ease off the earings, overhaul the gear, especially your reef tackles, before coming down from aloft, hoist the yard up, and trim with the braces.

Q. How would you reef the mainsail?

A. Haul the boom well in, hook the tackle on to the reef pennant. Lower the throat and peak halliards sufficiently to take in the reef, haul on the reef tackle till the cringle on the after leach of the sail is down on the boom. Pass the tack earing. Tie the reef points. Hoist up throat and peak, and trim sail. Take in the slack of the vangs (if any) and peak line.

Q. You are running with the wind on the port quarter, moderate wind, smooth water. The man at the helm lets her run off so as to bring the wind on the starboard quarter; what would you do?

A. Hard-a-starboard the helm, ease down the throat, and peak halliards, and trice the tack of the mainsail up. When she has come back, hoist up the peak and down with the tack.

Q. Suppose this happened in a strong breeze, what danger would you apprehend, supposing your guy pennant had broken?

A. That the bight of the boom sheet, as the boom was going over might sweep everything off the deck that it came in contact with. The sudden jerk also might spring the boom, carry away the main sheet, or split the sail.

Q. What is meant by the term goose wing?

A. Running with the gaff foresail guyed out on one side, and the mainsail on the other.

Q. Where do the guys lead?

A. Main one between the fore and main rigging to the windlass bitts, and the Fore one through a block at the bowsprit end. Sometimes the fore guy is led to the catheads.

Q. Suppose you were running in a gale, with the wind dead aft, what canvas would you carry?

A. Close reefed square topsail. Having the storm trysail and fore staysail reefed and ready for setting when required.

Q. Your topsail blows away, and the vessel will not keep ahead of the sea. What would you do?

A. Down helm, and heave to under the storm trysail, and storm fore staysail with sheet a-weather.

Q. On what occasion would you set your storm trysail in preference to a close reefed mainsail?

A. When it was likely that I should be compelled to heave to, or when the sea was getting heavy.

Q. Why in the latter case?

A. To take the weight of the main boom off the vessel. I would secure main boom in the crutch or on the rail before setting the storm trysail.

Q. Describe a storm trysail.

A. It is made of No. 1 canvas (roped in proportion) either with a jib head or with three cloths in the head; if the latter, it is bent on to a short gaff, and hoisted up as far as the throat halliards of the main gaff will take it. The clew is hauled aft by a luff tackle on deck. The luff of the sail is either laced round the mast or fitted with rope beckets, on which travelling trucks are rove.

Q. Why is it made to hoist so high?

A. To catch the wind in a heavy sea.

Q. How would you gybe it if you were taken aback?

A. By the weather tackle, which is hooked on over the main boom, and gaff. The peak halliards of the latter, and the topping lifts of the former being unhooked, and taken into the mast, to be out of the way of the storm trysail.

Q. You are in a gale, no storm trysail on board. What canvas would you heave to under?

A. A balance reefed mainsail, or a jib abaft the mast.

Q. Describe a balance reef.

A. It is used after the third or close reef has been taken in. The eyelet-holes for the reef-points extend from the close reef cringle on the after leach up to the throat earing (in small vessels), but in large vessels from the cringle in the after leach to about two or three feet below the throat earing, and on to the luff of the sail, where a cringle is worked in to hook on the tack tackle.

Q. How would you take in a balance reef, close reef being in?

A. Ease the peak halliards to take the strain off the after leach, lower the jaws of the gaff down by the throat halliards. Hook on the tack tackle to the cringle on the luff of the sail, reeve the points, tie them, set up throat and peak halliards, shorten vangs if any and peak line.

Q. Under sail on a wind with a jump of a sea, what precautions would you take to prevent the main boom from jerking up and down?

A. A guy for this purpose is usually put on the boom, just inside of the main sheet, and led to the main rigging. It is usually called a lazy guy.

Q. Describe it, and how it is put on?

A. A stout rope (about three fathoms) with a thimble in one end; this is clove hitched round the boom, leaving the thimble about a foot below the boom. The bight of the rope is then put under a cleat or chock, and the end rove through the thimble and belayed. It can be let go and cleared in a moment.

Q. You lose your bowsprit; it breaks off outside of gammoning; you are on a wind. What would you do?

A. Shorten sail, clear away the wreck, and secure the head stays to the stump of the bowsprit.

Q. You are running in the Atlantic to the eastward, under a three-reefed mainsail, close reefed forestaysail, and double reefed foresail. The wind at South West, with heavy sea and rain. Your foremast carries away about six feet above the deck, taking the forestaysail and foresail with it. The triatic stay had broken the head of the mainmast off above the eyes of the rigging, when the foremast fell and also broke the peak halliards of the mainsail, which caused the peak of the main gaff to drop. What would you do?

A. Port the helm, round to on the starboard tack, and clear away the wreck.

Q. Why on the starboard tack?

A. Because it would prevent gybing, and as the wind might draw round to the westward, the vessel would come up and head the sea.

Q. What would you do next?

A. Balance reef the mainsail, and lie to till the weather moderated, attending to the pumps during the interval.

Q. How would you hoist the peak of your main gaff with a balance reef in, the masthead and peak halliards having carried away above the rigging?

A. Hoist the peak of the gaff up with the lee boom topping lift, or unbend the sail from the gaff, take an Irish reef in it, and hoist it by the throat halliards.

Q. The foremast being gone, she will not lie to with a balance reefed mainsail. What would you do?

A. Lower it down, and try her under a small jib abaft the mast.

Q. What would you do when it moderated?

A. Take the main boom and rig it for a foremast, and after it was secured to the stump of the old mast I would take the storm main trysail and gaff and rig and set it as a fore trysail.

Q. How would you set your mainsail without a boom?

A. Treble reefed, with a luff tackle for a sheet.

Q. How would you proceed to ship your main boom as a foremast?

A. Unship the boom from mainmast. Get the jaws of the boom against the stump of foremast on the deck. Lift the after end of the boom, with one of the boom topping lifts, high enough for a tackle from the bowsprit to bowse it perpendicularly, having a guy on each side to keep the head of the boom amidships. I would clove hitch a warp over the upper end of the boom for two stays before hoisting the boom up. For shrouds I would use the two main boom topping lifts, one on each side, which are fitted with a runner and tackle. When perpendicular, lash and wedge the heel of the boom to the stump of foremast.

Q. How would you anchor in the Downs, wind at S.W., tide setting North-East, and you were running in from the southward?

A. Shorten sail to forestaysail and scandalized mainsail. Starboard the helm, haul down forestaysail, haul in the main sheet, and round to to leeward of Deal Bank Buoy. When head to wind, keep her so till she has lost headway. Down anchor and pay out chain. Lower the mainsail and furl sails.

Q. How would you moor?

A. Bring up with best bower anchor, slack away chain (say about sixty fathoms), and if the vessel would not drift to a position suitable for letting go the second anchor, send out a kedge anchor with a warp, and warp her to it. Let go the second anchor, slack away the chain, heaving in the best bower chain at the same time, until I had equal lengths out on both cables.

Q. How would you proceed to unmoor?

A. Slack away on the weather cable, heave up the lee anchor, cat and fish it; then heave short on the weather cable, ready for getting under weigh.

Q. What is a lee tide?

A. A tide setting to leeward, and with the wind.

Q. How would you tend a vessel in a tideway?

A. A light vessel to leeward, a loaded vessel to windward.

Q. Suppose you were at anchor in a calm, how would you keep the chain clear of the anchor?

A. By heaving in the cable quite short without tripping the anchor.

Q. What is meant by tide-rode?

A. Swung round by the tide, and riding head to it, at anchor.

Q. What is meant by wind-rode?

A. When swung round by the force of the wind at anchor against the tide.

Q. How would you place a kedge in a boat for carrying out?

A. Stock over the stern, flukes in the boat on a plank or spar for canting overboard.

Q. How would you carry out a bower anchor?

A. The crown under the boat with a slip rope, and a ring rope over the stern.

Q. You are on a lee shore, on anchorage ground, she will not stay, and there is no room to veer (or wear), how would you get her round?

A. Let go the anchor, or, if time allow, unshackle lee anchor, bend on a warp from the lee quarter, let go the anchor when the helm is put down, gather in the slack, and hold on the warp, this will check her round. When round slip the warp.

Q. How would you construct a raft to rescue a crew?

A. Three spare spars lashed as a triangle, with water casks lashed inside of the triangle, and small spare spars lashed on top.

Q. Your rudder is carried away; what do you do?

A. If running, lower down the foresail, get mainsheet in, and fore-staysail sheet to windward Get three spars, and make a triangle, secure a sail over them, bend on a span and sling some pieces of iron to the lower spar, bend on a stout warp to the span, heave over to windward, veer out the hawser, and the vessel will lie-to comfortably while you are rigging a jury rudder.

Q. You have no time to do this; you are on a lee shore?

A. Get a spare topsail yard, nail a couple of stout boards to one end at right angles to each other, pass it out under the tafrail, lash it amidships, get a luff tackle on the inboard end, and you will find she will steer unless a very unhandy vessel.

Q. You have no time for this even?

A. Then let go both anchors, and cut away the masts, if she won't ride to it without.

Q. What is a spinnaker?

A. A lofty triangular-shaped sail made of light canvas, used in modern racing yachts instead of a squaresail for running before the wind. It can also be used as a balloon jib for reaching in light winds. The foot of it is extended by means of a long spar called the spinnaker boom, which works with a goose neck on the fore-side of the mast.

Q. How do you set and take in a spinnaker?

A. Get the inner end of the boom over the tafrail on the side opposite to that on which you are carrying the main boom, light it along until the outer end is far enough aft to clear the head sheets, then launch forward, hook on the topping lift, bend on a couple of whips purchased to the outer end, lead one forward and the other aft, hoist away on the topping lift until it takes the weight of the boom, shove it forward until the goose neck can be shipped in its place on the mast. Bend on the halliards to the head of the sail, and the outer clew to the outhaul on the boom, taking care that it is on the fore side of the topping lift. Hoist away on the halliards and at the same time haul out the clew; when it is chock up to the topmast head, the clew close out, and the inner clew fast, slack down your topping lift until the boom is just clear of the rail and trim with the after guy. In large vessels it is usual to have another guy from the outer end to the side of the vessel to keep the boom from rising when the sail is distended by the pressure

of the wind. In taking in a spinnaker, top the boom well up, ease in the outhaul, and slack away the halliards at the same time, and gather in the sail as it comes down. Ease away the after guy until the boom is fore and aft, unship the goose neck, and stow along the deck; or the boom may be hoisted up with the topping lift until it is parallel with the mast.

Q. How would you set it as a jib?

A. Lash a small tail block on the bowsprit outside the shroud iron, reeve a rope through it, bend it on to the outer clew of your spinnaker and haul chock out, belay and hoist away on the halliards; use the balloon jib sheets for spinnakers sheets.

Q. You have not said anything about preventer backstays. What are they?

A. Temporary stays leading in yachts from the topmast head to the quarters. They are used when the jib topsail or spinnaker is set.

Q. You have spoken several times about "heaving to." Now you are running in a strong gale with heavy sea, and it is necessary to "heave to" to shorten sail, how would you do it so as not to run the risk of having the decks swept?

A. Batten down the hatches, get everybody aft to the mainsheet, watch for a smooth sea, and as the yacht begins to descend ease down the helm, and as the vessel comes up to the wind get in the mainsheet foot by foot, haul foresheet to windward, lash the helm a lee and proceed to reduce your canvas.

Q. Suppose you are beating through a crowded channel, with a very light breeze and strong tide and find that you are drifting foul of other vessels, what would you do?

A. If the tide was adverse, bring up. If the tide was favourable I would get the anchor or kedge over to leeward with plenty of chain, bend on a stout hawser to the chain within a couple of feet of the anchor, and lead it aft to the quarter. Put the helm down and let her come to; when she begins to lose way, let go the anchor to leeward and haul on the hawser; when she is fairly round, slip your cable and haul in the anchor over the stern.

Q. You are trying to claw off a lee shore in a gale under storm jib and three reefed mainsail and your vessel persists in running off her helm in the squalls, what would you do?

A. Get everything below that was at all weighty into the fore peak and sail her with the head-sheets very flat.

Q. Why?

A. Because the head sails (especially the jib) have a tendency to lift the bow when slack, but when flattened in very taut they depress the lee bow in the water and make a vessel gripe to windward.

FINIS.

R. BARHAM, Printer, 1, Queenhithe, Upper Thames Street, London, E.C.

INTERNATIONAL STEERING AND SAILING RULES.

From the Order in Council, dated 9th January, 1863.

REGULATIONS FOR PREVENTING COLLISIONS AT SEA, &c.

PRELIMINARY.

Art. 1. In the following Rules every Steam Ship which is under Sail and not under Steam is to be considered a Sailing Ship; and every Steam Ship which is under Steam, whether under sail or not, is to be considered a Ship under Steam.

RULES CONCERNING LIGHTS.

Art. 2. LIGHTS:—The Lights mentioned in the following Articles numbered 3, 4, 5, 6, 7, 8, and 9, and no others, shall be carried in all Weathers from Sunset to Sunrise.

Art. 3. LIGHTS FOR STEAM SHIPS:—Seagoing Steam Ships, when under weigh, shall carry:—

(*a.*) AT THE FOREMAST HEAD, a bright White Light, so fixed as to show an uniform and unbroken Light over an arc of the Horizon of 20 Points of the Compass; so fixed as to throw the Light 10 Points on each side of the Ship, viz., from right ahead to 2 Points abaft the Beam on either side; and of such a Character as to be visible on a dark Night, with a clear Atmosphere, at a Distan ce of at least Five Miles:

(*b.*) ON THE STARBOARD SIDE, a Green Light so constructed as to show an uniform and unbroken Light over an Arc of the Horizon of 10 Points of the Compass; so fixed as to throw the Light from right ahead to 2 Points abaft the Beam, on the Starboard Side; and of such a Character as to be visible on a dark Night, with a clear Atmosphere, at a Distance of at least Two Miles:

(*c.*) ON THE PORT SIDE, a Red Light, so constructed as to show an uniform and unbroken Light over an Arc of the Horizon of 10 points of the Compass; so fixed as to throw the Light from right ahead to 2 Points abaft the Beam on the Port Side; and of such a character as to be visible on a dark Night, with a clear Atmosphere, at a Distance of at least Two Miles:

(*d.*) The said Green and Red Side Lights shall be fitted with inboard Screens, projecting at least Three Feet forward from the Light, so as to prevent these Lights from being seen across the Bow.

Art. 4. LIGHTS FOR STEAM SHIPS, WHEN TOWING:—Steam Ships, when towing other Ships, shall carry Two bright White Mast-head Lights vertically, in addition to their side lights, so as to distinguish them from other Steam Ships. Each of these Mast-head Lights shall be of the same Construction and Character as the Mast-head Lights which other Steam Ships are required to carry.

Art. 5. LIGHTS FOR SAILING SHIPS: Sailing Ships under weigh, or being towed, shall carry the same Lights as Steam Ships under weigh, with the Exception of the White Mast-head Lights, which they shall never carry.

Art. 6. EXCEPTIONAL LIGHTS FOR SMALL SAILING VESSELS:—Whenever, as in the Case of small Vessels during bad Weather, the Green and Red Lights cannot be fixed, these lights shall be kept on Deck, on their respective sides of the Vessel, ready for instant Exhibition; and shall, on the approach of, or to other Vessels, be exhibited on their respective Sides in sufficient Time to prevent Collision, in such manner as to make them most visible, and so that the Green Light shall not be seen on the Port Side, nor the Red Light on the Starboard Side.

To make the Use of these portable Lights more certain and easy, the Lanterns containing them shall each be painted Outside with the Colour of the Light they respectively contain, and shall be provided with suitable Screens.

Art. 7. LIGHTS FOR SHIPS AT ANCHOR:—Ships, whether Steam Ships or Sailing Ships, when at Anchor in Roadsteads or Fairways, shall exhibit, where it can best be seen, but at a Height not exceeding Twenty Feet above the Hull, a White Light, in a globular Lantern of Eight Inches in Diameter, and so constructed as to show a clear uniform and unbroken Light visible all round the Horizon, and at a Distance of at least One Mile.

Art. 8. LIGHTS FOR PILOT VESSELS:—Sailing Pilot Vessels shall not carry the Lights required for other Sailing Vessels, but shall carry a White Light at the Mast-head, visible all round the Horizon,—and shall also exhibit a Flare-up Light every Fifteen Minutes.

Art. 9. LIGHTS FOR FISHING VESSELS AND BOATS:—Open Fishing Boats and other open Boats shall not be required to carry the Side Lights required for other Vessels; but shall, if they do not carry such Lights, carry a Lantern having a Green Slide on the one side and a Red Slide on the other side; and on the Approach of or to other Vessels, such Lantern shall be exhibited in sufficient time to prevent Collision, so that the Green Light shall not be seen on the Port Side, nor the Red Light on the Starboard Side.

Fishing Vessels and open Boats when at Anchor, or attached to their Nets and stationary, shall exhibit a bright White Light.*

Fishing Vessels and open Boats shall, however, not be prevented from using a Flare-up in addition, if considered expedient.*

RULES CONCERNING FOG SIGNALS.

Art. 10. FOG SIGNALS:—Whenever there is a Fog, whether by Day or Night, the Fog Signals described below shall be carried and used, and shall be sounded at least every Five Minutes; viz.:—

(*a.*) Steam Ships under weigh shall use a Steam Whistle placed before the funnel, not less than eight feet from the deck.

(*b.*) Sailing Ships under weigh shall use a Fog Horn:

(*c.*) Steam Ships and Sailing Ships, when not under weigh, shall use a Bell.

STEERING AND SAILING RULES.

Art. 11. TWO SAILING SHIPS MEETING:—If two Sailing Ships are meeting End on or nearly End on, so as to involve Risk of Collision, the Helms of both shall be put to Port, so that each may pass on the Port Side of the other.

Art. 12. TWO SAILING SHIPS CROSSING:—When two Sailing Ships are crossing so as to involve Risk of Collision, then, if they have the wind on different Sides, the Ship with the Wind on the Port Side shall keep out of the Way of the Ship with the Wind on the Starboard Side; except in the Case in which the Ship with the Wind on the Port Side is close hauled and the other Ship free, in which case the latter Ship shall keep out of the Way; but if they have the Wind on the same Side, or if one of them has the Wind aft, the Ship which is to windward shall keep out of the Way of the Ship which is to leeward.

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* LIGHTS REQUIRED BY THE SEA FISHERIES ACT, 1868, TO BE CARRIED BY ENGLISH AND FRENCH BOATS CONCERNED IN DRIFT-NET FISHING.

1. No boat shall anchor between sunset and sunrise on grounds where drift-net fishing is actually going on.

This does not apply to anchorings which may take place in consequence of accidents, or any other compulsory circumstances; but in such case the master of the boat thus obliged to anchor shall hoist, so that they shall be seen from a distance, two lights placed horizontally about 3 feet (1 metre) apart, and shall keep those lights up all the time the boat shall remain at anchor.

2. Boats fishing with drift-nets shall carry on one of their masts two lights, one over the other, 3 feet (1 metre) apart. To be kept up during all the time their nets shall be in the sea between sunset and sunrise.

Art. 13. Two Ships under Steam Meeting:—If two Ships under Steam are meeting End on or nearly End on so as to involve Risk of Collision, the Helms of both shall be put to Port, so that each may pass on the Port Side of the other.

Art. 14. Two Ships under Steam Crossing:—If two Ships under Steam are crossing so as to involve Risk of Collision, the Ship which has the other on her own Starboard Side shall keep out of the way of the other.

Art. 15. Sailing Ship and Ship under Steam:—If two Ships, one of which is a Sailing Ship and the other a Steam Ship, are proceeding in such Directions as to involve Risk of Collision, the Steam Ship shall keep out of the way of the Sailing Ship.

Art. 16. Ships under Steam to Slacken Speed:—Every Steam Ship, when approaching another Ship so as to involve Risk of Collision, shall slacken her Speed, or, if necessary, stop and reverse; and every Steam Ship shall, when in a Fog, go at a moderate speed.

Art. 17. Vessels overtaking other Vessels:—Every Vessel overtaking any other vessel shall keep out of the way of the said last-mentioned Vessel.

Art. 18. Construction of Articles 12, 14, 15, and 17:—Where by the above Rules One of Two Ships is to keep out of the Way, the other shall keep her Course, subject to the Qualifications contained in the following Article.

Art. 19. Proviso to save Special Cases:—In obeying and construing these Rules, due regard must be had to all Dangers of Navigation, and due regard must also be had to any special Circumstances which may exist in any particular Case rendering a Departure from the above Rules necessary in order to avoid immediate Danger.

Art. 20. No Ship under any circumstances to neglect proper Precautions:—Nothing in these Rules shall exonerate any Ship, or the Owner, or Master, or Crew thereof from the Consequences of any Neglect to carry Lights or Signals, or of any neglect to keep a proper Look-out, or of the Neglect of any Precaution which may be required by the ordinary Practice of Seamen, or by the special Circumstances of the Case.

ADDENDA TO THE REGULATIONS FOR PREVENTING COLLISIONS AT SEA.

From the London Gazette, August 4th, 1868.

Steering and Sailing Rules:—Whereas there has been doubt and misapprehension concerning the effect of the two Articles 11 and 13 (*see* p. 1).

Her Majesty, by virtue of the powers vested in Her, and by and with the advice of Her Privy Council, is pleased to make the following additions to the said Regulations by way of explanation of the said two recited Articles; that is to say:—

The said two Articles numbered 11 and 13 respectively, only apply to cases where ships are meeting end on, or nearly end on, *in such a manner as to involve risk of collision*. They, consequently, do not apply to two ships which must, if both keep on their respective courses, pass clear of each other.

The only cases in which the said two Articles apply, are, when each of the two ships is end on, or nearly end on, to the other; in other words, to cases in which, *by day*, each ship sees the masts of the other in a line, or nearly in a line, with her own; and, *by night*, to cases in which each ship is in such a position as to see both the side lights of the other.

The said two Articles do not apply, *by day*, to cases in which a ship sees another *a-head* crossing her own course; or, *by night*, to cases where the red light of one ship is opposed to the red light of the other; or where the green light of one ship is opposed to the green light of the other; or where a red light without a green light, or a green light without a red light, is seen a-head; or where both green and red lights are seen anywhere but a-head.

Explanations of Weather-Glasses in North Latitude.

THE BAROMETER RISES	THE BAROMETER FALLS
for Northerly wind (including from N.W., by the *North*, to the Eastward), for dry, or *less* wet weather,—for *less* wind,—or for more than one of these changes:— EXCEPT on a few occasions when rain (or snow) comes from the Northward with *strong* wind.	for Southerly wind (including from S.E. by the *South*, to the Westward), for wet weather,—for *stronger* wind,—or for more than one of these changes:— EXCEPT on a few occasions when *moderate* wind with Rain (or Snow) comes from the Northward.
A THERMOMETER FALLS For *change* of wind *towards any* of the above directions.	A THERMOMETER RISES For *change* of wind towards the *upper* of the above directions.

MOISTURE or DAMPNESS in the air (shown by a HYGROMETER), increases *before* or with Rain, Fog, or Dew.

Admiral Fitzroy's contractions for Barometer Scales in North Latitude.

RISE FOR N. E'LY. DRY OR LESS WIND.	FALL FOR S.W'LY. WET OR MORE WIND.
Except wet from N.E'ward.	Except wet from N.E'ward.
"Long foretold, Long last; Short notice— Soon past."	"First rise, After low, Foretells Stronger blow."

A summary *generally* useful throughout the world.

RISE FOR COLD, DRY OR LESS WIND.	FALL FOR WARM, WET OR MORE WIND.

"When the wind shifts against the sun,
Trust it not, for back it will run."

If in South Latitude read S. or S.'ly for N. or N.'ly, &c., &c.

It should always be remembered that the state of the air *foretells coming* weather, rather than shows the weather that is *present*—(an invaluable fact too often overlooked)—that the longer the time between the signs and the change foretold by them, the longer such altered weather will last; and, on the contrary, the less the time between a warning and a change, the shorter will be the continuance of such foretold weather.

To know the state of the air, not only barometers and thermometers should be watched, but the appearance of the sky-clouds should be vigilantly noticed.

If the barometer has been about its ordinary height, say near thirty inches, at the sea level, and is steady, or rising—while the thermometer falls, and dampness becomes less—North-westerly, Northerly, or North-easterly wind—or less wind—less rain or snow—may be expected.

On the contrary, if a fall takes place, with a rising thermometer and increased dampness, wind and rain may be expected from the South-eastward, Southward, or South-westward.

In winter, a fall, with low thermometer, foretells snow.

Exceptions to these rules occur when a Northerly wind, with wet (rain, hail, or snow,) is impending, before which the barometer often *rises* (on account of the *direction* of the coming wind alone) and deceives persons who, from that sign only (the rising), expect fair weather.

When the barometer is rather below its ordinary height, say down to near twenty-nine inches and a-half (at the sea level), a rise foretells less wind, or change in its direction towards the Northward—or less wet; but when it has been very low, about twenty-nine inches, the first *rising* usually precedes, or indicates, *strong* wind—at times heavy squalls from the North-westward, Northward, or North-eastward—*after* which violence a gradually rising glass foretells improving weather—if the thermometer falls. But, if the warmth continue, probably the wind will back (shift against the sun's course), and more Southerly or South-westerly wind will follow, especially if the barometer's rise is sudden.

The most dangerous shifts of wind, or the *heaviest* Northerly gales, happen *soon* after the barometer *first* rises from a very low point; or, if the wind veers *gradually*, at the same time afterwards with a *rising* glass.

Indications of approaching change of weather, and the direction and force of winds, are shown less by the height of the barometer than by its falling or rising. Nevertheless, a height of more than thirty (30·3) inches (at the level of the sea) is indicative of fine weather and *moderate* winds; *except* from East to North, *occasionally* whence it *may* blow strongly.

A rapid rise of the barometer indicates unsettled weather. A slow movement the contrary; as does likewise a *steady* barometer, which, when continued, and with dryness, foretells very fine weather lasting for some time.

A rapid and considerable fall is a sign of stormy weather, and rain (or snow). Alternate rising and sinking, or oscillation, indicates unsettled and threatening weather.

The greatest depression of the barometers are with gales from S.E., S., or S.W.; the greatest elevations, with wind from N.W., N., or N.E., or with calm.

Though the barometer generally falls with a Southerly, and rises with a Northerly wind, the contrary *sometimes* occurs, in which case the Southerly wind is usually dry, with fine weather, or the Northerly wind is violent and accompanied by rain, snow, or hail—perhaps with lightning.

When the barometer sinks considerably, much wind, rain (perhaps with hail), or snow will follow, with or without lightning. The wind will be from the Northward, if the thermometer is low (for the season); from the Southward if the thermometer is high. Occasionally a low glass is followed or attended by lightning *only*, while a storm is beyond the horizon.

A sudden fall of the barometer, with a Westerly wind, is sometimes followed by a violent storm from N.W. or N.E.

If a gale sets in from the E. or S.E., and the wind veers by the South, the barometer will continue falling until the wind is near a marked change, when a lull *may* occur; after which the gale will soon be renewed, perhaps suddenly and violently, and the veering of the wind towards the N.W., North, or N.E. will be indicated by a rising of the barometer with a fall of the thermometer.

SIGNS OF WEATHER.

This account of weather signs is due to Admiral Fitzroy.

Colour of Sky—Clouds—Flight of Sea Birds—Movements of Animals—Clearness of the Air—Wind dying down at night.

Whether clear or cloudy—a rosy sky at sunset presages fine weather:—a sickly greenish hue, wind and rain; tawny, or coppery clouds—wind: a dark (or *Indian*) red, rain; a red sky in the morning bad weather, or much wind (perhaps also rain):—a grey sky in the morning, fine weather,—a high dawn, wind:—a low dawn, fair weather.

NOTE.—A "high dawn" is when the first indications of daylight are seen above a bank of clouds. A "low dawn" is when the day breaks on or near the horizon, the first streaks of light being very low down.

Soft-looking or delicate clouds foretell fine weather, with moderate or light breezes:—hard edged oily-looking clouds,—wind. A dark, gloomy blue sky is windy;—but a light

bright blue sky indicates fine weather. Generally, the *softer* clouds look, the less wind (but perhaps more rain) may be expected;—and the harder, more "greasy," rolled, tufted, or ragged,—the stronger the coming wind will prove. Also—a bright yellow sky at sunset presages wind: a pale yellow, wet: orange or copper coloured, wind and rain—and thus by the prevalence of red, yellow, green, grey, or other tints, the coming weather may be foretold very nearly:—indeed, if aided by instruments, almost exactly.

Light, delicate, quiet tints or colours, with soft, indefinite forms of clouds, indicate and accompany fine weather: but gaudy or unusual hues, with hard, definitely outlined clouds, foretell rain, and probably strong wind.

Small inky-looking clouds foretell rain:—light scud clouds driving across heavy masses show wind and rain; but, if alone, may indicate wind only—proportionate to their motion.

High *upper* clouds crossing the sun, moon, or stars, in a direction different from that of the lower clouds, or the wind then felt below,—foretell a change of wind toward *their* direction.

NOTE.—Between the tropics, or in the regions of the Trade Winds, there is generally an upper and counter current of air, with very light clouds, which is not an indication of any approaching change. In middle latitudes such upper currents are not so frequent *(or evident?)* except before a change of weather.

After fine clear weather, the first signs in the sky of a coming change, are usually light streaks, curls, wisps, or mottled patches of white distant cloud, which increase and are followed by an overcasting of murky vapour that grows into cloudiness. This appearance, more or less oily, or watery, as wind or rain will prevail, is an infallible sign.

Usually the higher and more distant such clouds seem to be,—the more gradual, but, general, the coming change of weather will prove.

Misty clouds forming or hanging on heights, show wind and rain coming—if they remain, increase, or descend. If they rise or disperse—the weather will improve or become fine.

When sea birds fly out early, and far to seaward, moderate wind and fair weather may be expected. When they hang about the land, or over it, sometimes flying inland, strong winds with stormy weather are probable. As, besides birds, many creatures are affected by the approach of rain or wind, their indications should not be slighted by an observer who wishes to foresee changes.

There are other signs of coming change in the weather known less generally than is desirable; and therefore worth notice: such as,—when birds of long flight, rooks, swallows, or others, hang about home, and fly up and down or low—rain or wind may be expected. Also when animals seek sheltered places, instead of spreading over their usual range;—when pigs carry straw to their styes; when smoke from chimneys does not ascend readily (straight upwards during calm), unfavourable change is probable.

Dew is an indication of coming fine weather. Its formation never *begins* under an overcast sky, or when there is much wind.

Remarkable clearness of atmosphere, especially near the horizon: distant objects, such as hills, unusually visible, or well defined; or raised (by refraction,—much refraction is a sign of easterly wind)—and what is called "a good *hearing* day," may be mentioned among signs of wet, if not wind, to be expected in a short time.

More than usual twinkling or apparent size of the stars; indistinctness or apparent multiplication of the moon's horns; haloes; "wind-dogs" (fragments or pieces, as it were, of rainbows (sometimes called "wind-galls") seen on detached clouds),—and the rainbow; are more or less significant of increasing wind, if not approaching rain, with or without wind.

Near land, in sheltered harbours, in valleys, or over low ground, there is usually a marked diminution of wind and a dispersion of clouds during the early part of the night. At such times an eye on an overlooking height may see a body of vapour extending below (rendered visible by the cooling of night) which *seems* to check the wind.

"North—stormy, stormy and bold,
East—steady—frost and cold;
South—rain—with a troubled sea,
West—squalls, and helm's a-lee!"

"A rainbow in the morning,
Is the sailor's warning,
But a rainbow at night,
Is a sailor's delight."

"Red in the East the sailor likes least;
Red in the West the sailor likes best."

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